Notice of Allowability	Application No.	Applicant(s)	
	10/509,212	ROSEN ET AL.	
	Examiner	Art Unit	
	Ling-Siu Choi	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the Response filed 04/13/2007*.

2. ☒ The allowed claim(s) is/are *1-15*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

 * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

1. This Office Action is in response to the Response filed April 13, 2007. Claims 1-15 are now pending.

Allowable Subject Matter

2. Claims 1-15 are allowed.

3. The following is an examiner's statement of reasons for allowance:

The present claims are allowable over the closest references: Toyoda et al. (JP 2001-002731), Machida et al. (JP 2000-038418), and Machida et al. [US 6,169,154 B1 (or US 5,955,557)].

Summary of Claim 1:

An article of manufacture, comprising
a linear copolymer of ethylene and vinyl aromatic monomer having a weight average molecular weight of less than 15,000
wherein the copolymer has a first and second terminal group: the first terminal end group being a methyl group and the second terminal end group being a vinyl group **wherein** the terminal methyl group / the terminal vinyl group = 0.8:1 to 1:0.8

Toyoda et al. disclose a wax comprising a polymer having a vinyl type **or** a vinylidene type unsaturated bond at one side terminal of the polymer chain, which comprise ethylene and C_{3-10} α-olefin and has the molar ratio of ethylene and α-olefin is (81-100)/(0-19) (abstract; wax: [0010]). Toyoda et al. further disclose that the weight average molecular weights of the polymers are exemplified to be 1,700, 3,000, or 4,600 (Table 1). Toyoda et al. also disclose that a denaturation of an end unsaturated bond is carried out by the contact with maelic anhydride to provide a toner release agent or lubricant ([0163]; [0164]; [0173]). It is noted that Toyoda et al. is silent on another terminal group to be methyl group. Since the polymer is obtained via additional polymerization of ethylene and α-olefin, the resulting polymer would contain a terminal methyl group. However, Toyoda et al. do not teach or fairly suggest a linear olefinic copolymer of ethylene and vinyl aromatic monomer and having the ratio of the terminal methyl group to the terminal vinyl group in the range of 0.8:1 to 1:0.8.

Machida et al.'418 disclose an olefinic macromonomer which satisfies the following requirements: (1) the weight-average molecular weight is 200-100,000; (2) the ratio of vinyl group in total unsaturated terminal is ≥ 60%; and (3) the content of ethylene or propylene is greater than 50 mol.% (abstract). However, Machida et al.'418 do not teach or fairly suggest a linear olefinic macromonomer comprising ethylene and vinyl aromatic monomer and having the ratio of the terminal methyl group to the terminal vinyl group in the range of 0.8:1 to 1:0.8.

Machida et al.'154 disclose a **branched** ethylenic macromomomer which can function as a comonomer to provide a copolymer having excellent molding and working

properties, the branched ethylenic macromonomer has (a) a molar ratio of a terminal methyl group/a vinyl group in the range of 1 to 100; (b) a ratio of vinyl groups to the total unsaturated group in the macromonomer being 70 mol% or more; and (c) a weight-average molecular weight of the macromonomer is in the range of 100 to 20,000 (abstract; col. 6, lines 45-58). Machida et al. further disclose that the branched ethylenic macromomomer comprises ethylene and "at least one selected from the group consisting of α-olefins having 3 to 20 carbon atoms, cyclic olefins and styrene" (col. 5, lines 61-65). However, Machida et al.'154 do not teach or fairly suggest a **linear** olefinic macromonomer comprising ethylene and vinyl aromatic monomer and having the ratio of the terminal methyl group to the terminal vinyl group in the range of 0.8:1 to 1:0.8.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.

LING-SUI CHOI
PRIMARY EXAMINER

April 25, 2007